

<!--StartFragment-->ZCCHV_RAT

ID ZCCHV_RAT Reviewed; 776 AA.
AC Q8K3Y6;
DT 10-MAY-2004, integrated into UniProtKB/Swiss-Prot.
DT 01-OCT-2002, sequence version 1.
DT 25-NOV-2008, entry version 34.
DE RecName: Full=Zinc finger CCCH-type antiviral protein 1;
DE Short=Zinc finger antiviral protein;
DE Short=rZAP;
GN Name=Zc3hav1; Synonyms=Zap;
OS Rattus norvegicus (Rat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Sciurognathi;
OC Muroidea; Muridae; Murinae; Rattus.
OX NCBI_TaxID=10116;
RN [1]
RP NUCLEOTIDE SEQUENCE [MRNA], FUNCTION, AND TISSUE SPECIFICITY.
RX PubMed=12215647; DOI=10.1126/science.1074276;
RA Gao G., Guo X., Goff S.P.;
RT "Inhibition of retroviral RNA production by ZAP, a CCCH-type zinc
RT finger protein."
RL Science 297:1703-1706(2002).
RN [2]
RP PROTEIN SEQUENCE OF 227-238; 341-349; 359-371 AND 548-562, AND MASS
RP SPECTROMETRY.
RC STRAIN=Sprague-Dawley; TISSUE=Brain;
RA Lubec G., Kang S.U., Lubec S.;
RL Submitted (SEP-2007) to UniProtKB.
RN [3]
RP FUNCTION.
RX PubMed=14557641; DOI=10.1128/JVI.77.21.11555-11562.2003;
RA Bick M.J., Carroll J.W., Gao G., Goff S.P., Rice C.M., McDonald M.R.;
RT "Expression of the zinc-finger antiviral protein inhibits alphavirus
RT replication."
RL J. Virol. 77:11555-11562(2003).
RN [4]
RP SUBCELLULAR LOCATION, NUCLEAR LOCALIZATION SIGNAL, AND NUCLEAR EXPORT
RP SIGNAL.
RX PubMed=15358138; DOI=10.1016/j.bbrc.2004.06.174;
RA Liu L., Chen G., Ji X., Gao G.;
RT "ZAP is a CRM1-dependent nucleocytoplasmic shuttling protein."
RL Biochem. Biophys. Res. Commun. 321:517-523(2004).
RN [5]
RP RNA-BINDING.
RX PubMed=15542630; DOI=10.1128/JVI.78.23.12781-12787.2004;
RA Guo X., Carroll J.-W., McDonald M.R., Goff S.P., Gao G.;
RT "The zinc finger antiviral protein directly binds to specific viral
RT mRNAs through the CCCH zinc finger motifs."
RL J. Virol. 78:12781-12787(2004).

RN [6]
 RP FUNCTION.
 RX PubMed=17182693; DOI=10.1128/JVI.01601-06;
 RA Mueller S., Moeller P., Bick M.J., Wurr S., Becker S., Guenther S.,
 RA Kuemmerer B.M.;
 RT "Inhibition of filovirus replication by the zinc finger antiviral
 RT protein.";
 RL J. Virol. 81:2391-2400(2007).
 RN [7]
 RP FUNCTION, AND INTERACTION WITH EXOSC5.
 RX PubMed=17185417; DOI=10.1073/pnas.0607063104;
 RA Guo X., Ma J., Sun J., Gao G.;
 RT "The zinc-finger antiviral protein recruits the RNA processing exosome
 RT to degrade the target mRNA.";
 RL Proc. Natl. Acad. Sci. U.S.A. 104:151-156(2007).
 CC -!- FUNCTION: Induces an innate immunity to viral infections by
 CC preventing the accumulation of viral RNAs in the cytoplasm. Seems
 CC to recruit the RNA processing exosome to degrade the target RNAs.
 CC Inhibits Moloney murine leukemia virus, alphavirus and filovirus
 CC replication.
 CC -!- SUBUNIT: Interacts with EXOSC5.
 CC -!- SUBCELLULAR LOCATION: Cytoplasm. Nucleus. Note=Localizes in the
 CC cytoplasm at steady state, but shuttles between nucleus and
 CC cytoplasm in a XPO1-dependent manner.
 CC -!- TISSUE SPECIFICITY: Expressed in the kidney and liver.
 CC -!- DOMAIN: The second and fourth zinc fingers are involved in binding
 CC to specific viral RNAs.
 CC -!- SIMILARITY: Contains 4 C3H1-type zinc fingers.
 CC -!- SIMILARITY: Contains 1 WWE domain.
 CC -----
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 CC -----
 DR EMBL; AF521008; AAM75358.1; -; mRNA.
 DR UniGene; Rn.42053; -.
 DR PhosphoSite; Q8K3Y6; -.
 DR Ensembl; ENSRNOG00000013948; Rattus norvegicus.
 DR RGD; 628694; Zc3hav1.
 DR HOVERGEN; Q8K3Y6; -.
 DR GO; GO:0005737; C:cytoplasm; IEA:UniProtKB-KW.
 DR GO; GO:0005634; C:nucleus; IEA:UniProtKB-KW.
 DR GO; GO:0003723; F:RNA binding; IEA:UniProtKB-KW.
 DR GO; GO:0008270; F:zinc ion binding; IEA:InterPro.
 DR GO; GO:0009615; P:response to virus; IEA:UniProtKB-KW.
 DR InterPro; IPR004170; WWE.
 DR InterPro; IPR000571; Znf_CCCH.
 DR Pfam; PF00642; zf-CCCH; 1.
 DR PROSITE; PS50918; WWE; 1.
 DR PROSITE; PS50103; ZF_C3H1; 2.

Qy	241	GAHRDRSKSRDRFLHNSLEFLSPVVSPLGSGPPSPDVTSCKDSLEDVSVSDVTQKFKYLGT	300
Db	241	GAHRDRSKSRDRFLHNSLEFLSPVVSPLGSGPPSPDVTSCKDSLEDVSVSDVTQKFKYLGT	300
Qy	301	HDRAQLSPVSSKAAGVQGSPQMRASQEFSEEDGNLDDIFSRNRSDSSSSRASAQKVAQRNE	360
Db	301	HDRAQLSPVSSKAAGVQGSPQMRASQEFSEEDGNLDDIFSRNRSDSSSSRASAQKVAQRNE	360
Qy	361	AVAMKMGMEVKGKKEAPDIDRVPFLNSYIDGVTMEKASVSGIPGKKFTANDLENLLLLND	420
Db	361	AVAMKMGMEVKGKKEAPDIDRVPFLNSYIDGVTMEKASVSGIPGKKFTANDLENLLLLND	420
Qy	421	TWKNVAKPQDLQTTGRITDSGQDKAFLQNKYGGNPVWASASTHNAPNGSSQIMDETPNVS	480
Db	421	TWKNVAKPQDLQTTGRITDSGQDKAFLQNKYGGNPVWASASTHNAPNGSSQIMDETPNVS	480
Qy	481	KSSTSGFAIKPAIAGGKEAVYSGVQSPRSQVLAVPGEATTPVQSNRLPQSPLSSSSHRAA	540
Db	481	KSSTSGFAIKPAIAGGKEAVYSGVQSPRSQVLAVPGEATTPVQSNRLPQSPLSSSSHRAA	540
Qy	541	ASGSPGKNSTHTSVSPAIESSRMTSDPDEYLLRYILNPLFRMDNHGPKEICQDHLYKGCQ	600
Db	541	ASGSPGKNSTHTSVSPAIESSRMTSDPDEYLLRYILNPLFRMDNHGPKEICQDHLYKGCQ	600
Qy	601	QSHCDRSHFHLPIRWQMFVYTTWRDFQDMESIEQAYCDPHVELILIHQINFQKMTCD	660
Db	601	QSHCDRSHFHLPIRWQMFVYTTWRDFQDMESIEQAYCDPHVELILIHQINFQKMTCD	660
Qy	661	YPIRRLSTPSYEEKPLSAVFATKWIWYWKNEFNEYIQYGNESPGHTSSDINSAYLESFFQ	720
Db	661	YPIRRLSTPSYEEKPLSAVFATKWIWYWKNEFNEYIQYGNESPGHTSSDINSAYLESFFQ	720
Qy	721	SCPRGVLPPFQAGSQKYELSFQGMQTNIAASKTORHVVRPVPFVSSNDVEQKRRGPE	776
Db	721	SCPRGVLPPFQAGSQKYELSFQGMQTNIAASKTORHVVRPVPFVSSNDVEQKRRGPE	776

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